

**BIDIRECTIONAL LATERAL  
SUPERJUNCTION DEVICE WITH RESURF REGION**

**ABSTRACT OF THE INVENTION**

A lateral conduction superjunction device has bidirectional conduction characteristics. In a first embodiment, spaced vertical trenches in a P substrate are lined with N diffusions. A central MOSgate structure is disposed centrally in the parallel trenches and source and drain electrodes are at the opposite respective ends of the trenches. In a second embodiment, flat layers of alternately opposite conductivity types have source and drain regions at their opposite ends. A trench MOSgate is disposed between the source region at one end of the layers to enable bidirectional currant flow through the stocked layers.

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